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DOCUMENT NUMBER: 136:396940
TITLE: Electrochemical detection of nucleic acid sequences
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Honghua; Naser, Najih; Roe, R. Michael;
Stewart, Thomas N.; Thompson, Deborah
M.; Sundseth, Rebecca; Wegner,
Steven E.
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PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6391558	B1	20020521	US 2000-549853	20000414
US 2004072158	A1	20040415	US 2002-82714	20020225
PRIORITY APPLN. INFO.:			US 1997-40949P	P 19970318
			US 1998-44206	B2 19980317
			US 2000-549853	A3 20000414

AB An electrochem. detection system which specifically detects selected nucleic acid segments is described. The system utilizes biol. probes such as nucleic acid or peptide nucleic acid probes which are complementary to and specifically hybridize with selected nucleic acid segments in order to generate a measurable current when an amperometric potential is applied. The electrochem. signal can be quantified.

IC ICM C12Q001-68
ICS C12P019-34; G01N015-06; G01N030-96; G01N027-00

INCL 435006000

CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9

ST electrochem detection sensor nucleic acid sequence

IT Proteins

RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(A, bioreporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT Primers (nucleic acid)

RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(DNA, bioreporter extension by; electrochem. detection of nucleic acid sequences)

IT Proteins

RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(G, bioreporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT Sensors

(array of; electrochem. detection of nucleic acid sequences)

IT Electrodes

(bioreporter attached to surface of working; electrochem. detection of

nucleic acid sequences)

IT Adsorption
Crosslinking
Electrostatic force
(bioreporter mol. attached to working electrode by; electrochem. detection of nucleic acid sequences)

IT Antibodies and Immunoglobulins
Avidins
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(bioreporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT Molecular association
(bioreporter-target mol. complex; electrochem. detection of nucleic acid sequences)

IT Genetic element
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blocked 3'-end, of bioreporter; electrochem. detection of nucleic acid sequences)

IT Bond
(covalent, bioreporter mol. attached to working electrode by; electrochem. detection of nucleic acid sequences)

IT Mutation
(deletion, DNA sequence containing; electrochem. detection of nucleic acid sequences)

IT DNA sequences
Electric current
Nucleic acid hybridization
Potentiostats
Reference electrodes
Spectrometers
(electrochem. detection of nucleic acid sequences)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(electrochem. detection of nucleic acid sequences)

IT Peptide nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(electrochem. detection of nucleic acid sequences)

IT Mutation
(insertion, DNA sequence containing; electrochem. detection of nucleic acid sequences)

IT Oligonucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nucleic acid target mol. is an; electrochem. detection of nucleic acid sequences)

IT Oxidation, electrochemical
Reduction, electrochemical
(of reporter mol.; electrochem. detection of nucleic acid sequences)

IT DNA
RNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(oligonucleotide; electrochem. detection of nucleic acid sequences)

IT DNA
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer, bioreporter extension by; electrochem. detection of nucleic acid sequences)

IT Electric potential

(pulse of; electrochem. detection of nucleic acid sequences)

IT Electric current
(pulsed, intermittent; electrochem. detection of nucleic acid sequences)

IT Mutation
(substitution, DNA sequence containing; electrochem. detection of nucleic acid sequences)

IT Nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(target mol., detection of; electrochem. detection of nucleic acid sequences)

IT Antigens
Peptides, biological studies
Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(target mol.; electrochem. detection of nucleic acid sequences)

IT 9013-20-1, Streptavidin 157885-16-0, Neutravidin
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(bioreporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT 9001-78-9, Alkaline phosphatase 9003-99-0, Peroxidase
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(horseradish, reporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT 9012-90-2, DNA polymerase 9014-24-8, RNA polymerase 9068-38-6, Reverse transcriptase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(primer extension by; electrochem. detection of nucleic acid sequences)

IT 1672-46-4, Digoxigenin 2321-07-5, Fluorescein
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reporter mol. labeled with; electrochem. detection of nucleic acid sequences)

IT 429047-43-8 429047-44-9 429047-46-1 429047-47-2 429047-48-3
429047-50-7 429047-51-8 429047-52-9 429047-53-0 429047-54-1
429047-55-2 429047-56-3 429047-57-4 429047-58-5 429047-59-6
429047-60-9 429047-61-0 429047-62-1 429047-63-2 429047-64-3
429047-65-4 429047-66-5 429047-67-6 429047-68-7 429047-69-8
429047-70-1 429047-71-2 429047-72-3 429047-73-4 429047-74-5
429047-75-6 429047-77-8
RL: PRP (Properties)
(unclaimed nucleotide sequence; electrochem. detection of nucleic acid sequences)

REFERENCE COUNT: 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT